

What is claimed is:

1. A thermal compression system adapted to encompass a portion of a limb, comprising:

a fluid container having a fluid output line and a fluid input line;

5 a fluid pump connected with the fluid output line of the fluid container;

a cuff connected with an output of the fluid pump that receives fluid from the fluid container through the fluid pump;

where the cuff includes at least one fluid chamber that receives fluid from the fluid pump, where the at least one fluid chamber is formed having a predetermined shape 10 that avoids applying compression in at least one area of the limb that has at least one blood flow path while at the same time applies compression in at least one therapeutic area of the limb; and where the at least one fluid chamber includes at least one cuff output that is connected with the fluid input line of the fluid container that allows fluid to be returned to the fluid container from the cuff.

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2. The thermal compression system of claim 1, further including a control unit connected with the fluid pump that controls operation of the fluid pump.

20 3. The thermal compression system of claim 2, where the control unit includes a timer that runs the fluid pump at predetermined time intervals to provide fluid from the fluid container to the cuff while at the same time returning fluid from the cuff to the fluid container.

4. The thermal compression system of claim 1, where the fluid pump runs continuously to constantly provide fluid from the fluid container to the cuff and return fluid from the cuff to the fluid container.

5. The thermal compression system of claim 1, further comprising a control unit connected with the fluid pump and a temperature sensor that is located in the fluid chamber, where the control unit turns the fluid pump on when the temperature sensor indicates that the fluid in the cuff reaches a predetermined temperature threshold.

10 6. The thermal compression system of claim 1, further comprising a control unit connected with the fluid pump and a pressure sensor that is located in the fluid chamber, where the control unit generates an indication if the pressure sensor senses that pressure being applied by the cuff reaches a predetermined threshold.

15 7. The thermal compression system of claim 1, further comprising at least one quick-disconnect connector that connects the output line of the fluid pump and the fluid input line of the fluid container with the cuff.

8. A thermal compression system, comprising:

20 means for securing a cuff to an outside portion of a limb;

means for holding fluid;

a fluid pump for pumping fluid into the cuff from the means for holding fluid;

means for removing fluid from the cuff and returning fluid to the means for holding fluid; and

where the cuff includes means for restricting compression being applied to at least one blood flow path of the limb while at the same time providing compression in at least 5 one therapeutic area of the limb.

9. A method of applying thermal compression to part of a human body, comprising the steps of:

- (a) securing a cuff to engage an outside portion of a limb;
- 10 (b) supplying fluid to the cuff with an electric fluid pump;
- (c) restricting compression being applied by the cuff to an outside portion of the limb in an area containing at least one blood flow path;
- (d) supplying compression to the outside portion of the limb in at least one therapeutic area; and
- 15 (e) removing fluid from the cuff while at the same time replacing the removed fluid with new fluid.

10. The method of claim 9, where the cuff is secured to the outside portion of the limb using a connection mechanism that includes a pair of Velcro straps.

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11. The method of claim 9, where the electric fluid pump is connected with a fluid container that holds fluid for use with the cuff.

12. The method of claim 9, where the step of restricting compression is
accomplished by prohibiting fluid from entering a compression chamber of the cuff that
is located in the area of the at least one blood flow path.

5 13. The method of claim 9, where the step of supplying compression is
accomplished by filling a compression chamber of the cuff with fluid located in the at
least one therapeutic area of the limb.

10 14. The method of claim 9, where fluid is removed from the cuff through a
cuff output and returned to a fluid container.

15. A thermal compression system adapted to encompass a portion of a limb,
comprising:

15 a fluid container having a fluid output line and a fluid input line;
a fluid pump connected with the fluid output line of the fluid container;
a cuff connected with the fluid pump;
where the cuff includes a lower fluid chamber that receives fluid from the fluid
pump, where the cuff includes an upper fluid chamber that receives fluid from the fluid
pump, where the upper fluid chamber is formed in a predetermined shape that avoids
20 applying compression in at least one area of the limb that contains at least one blood flow
path while at the same time supplying compression in at least one area of the limb that
requires therapy, and where the lower fluid chamber and the upper fluid chamber include

at least one output that is connected with the fluid input line of the fluid container that returns fluid to the fluid container.

16. The thermal compression system of claim 15, further including a control
5 unit connected with the fluid pump that controls operation of the fluid pump.

17. The thermal compression system of claim 16, where the control unit includes a timer that runs the fluid pump at predetermined time intervals to circulate the fluid from the fluid container through the cuff and back to the fluid container for a
10 predetermined amount of time.

18. The thermal compression system of claim 15, where the pump runs continuously thereby supplying fluid from the fluid container to the cuff while at the same time returning fluid from the cuff to the fluid container.

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19. The thermal compression system of claim 15, further comprising a control unit connected with the pump and a temperature sensor that is located in the lower fluid cavity of the cuff, where the control unit turns on the pump when a temperature of the fluid rises above a predetermined level.

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20. The thermal compression system of claim 15, further comprising a control unit connected with a pressure sensor located in the upper fluid cavity that monitors the pressure being applied to the portion of the limb.

21. The thermal compression system of claim 15, where the upper fluid chamber is formed to hold more fluid in areas where more compression is desired and less fluid in areas where less compression is desired.

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22. A thermal compression system adapted to encompass a knee of a person, comprising:

a container having a fluid output line and a fluid input line, where the container holds fluid used for treating the knee;

10 a cuff including a fluid input, a fluid output, and a fluid chamber that includes at least one fluid receiving cavity and at least one compression cavity, where the cuff is capable of being secured around the knee so that a surface of the cuff is in contact with the knee;

15 a fluid pump connected with the fluid output line of the container and the fluid input of the cuff, where the fluid pump supplies fluid to the fluid cavity and the compression cavity; and

where the fluid receiving cavity supplies thermal therapy to the knee and the compression cavity applies pressure to at least one area of the knee that does not contain a blood flow path, where the fluid output of the cuff is connected with the fluid input line of the container, where fluid exits the cuff through the fluid output thereby being returned to the container.

23. The thermal compression system of claim 22, further comprising an opening in the cuff that is used to position the patella of the knee in the cuff.

24. The thermal compression system of claim 22, further including a control unit connected with the fluid pump that controls operation of the fluid pump.

25. The thermal compression system of claim 24, where the control unit includes a timer that runs the fluid pump at predetermined time intervals to provide fluid from the fluid container to the cuff while at the same time returning fluid from the cuff to the fluid container.

26. The thermal compression system of claim 22, where the fluid pump runs continuously thereby constantly providing fluid from the fluid container to the cuff and returning fluid from the cuff to the fluid container.

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27. The thermal compression system of claim 22, further comprising a control unit connected with the fluid pump and a temperature sensor that is located in the fluid chamber, where the control unit turns on the fluid pump when the temperature sensor indicates that the fluid in the cuff reaches a predetermined temperature.

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28. The thermal compression system of claim 22, further comprising a control unit connected with the fluid pump and a pressure sensor that is located in the fluid

chamber, where the control unit generates an indication if the pressure sensor indicates that a pressure being applied by the cuff reaches a predetermined level.